



Accelerating Greenfield Development with Business Innovation and Domain Integration

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Agenda

- Project Objectives
- Execution Strategy
- Domain Integration
- Field Development – Execution
- Collaboration and Way Forward



Background and Objectives

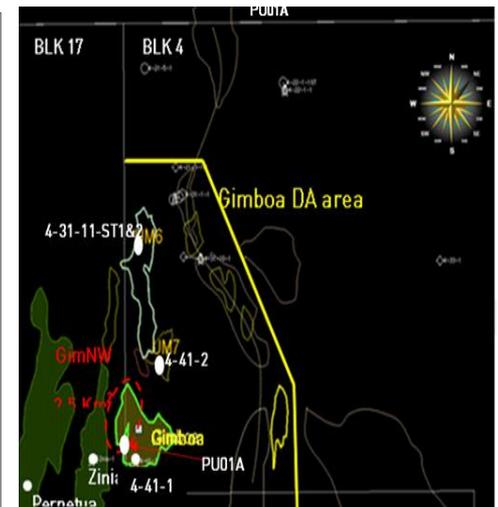
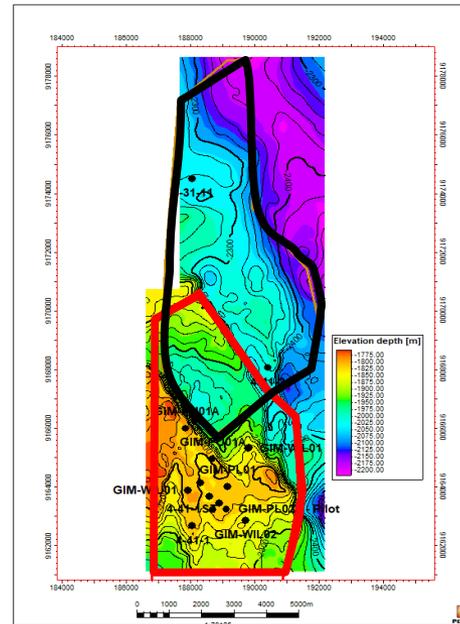
Block 4 - Located at the Southern Margin of Lower Congo Basin
Deep Water – 650-750m

Gimboa- Brown Field

- Declining Production from 30K bbl/d to < 4K bbl/d
- High Water Production
- Increased OPEX cost
- Under-utilized FPSO

UM6/UM7- Green Field

- Potential of Incremental production of 25-35K bbl/d
- Economically Challenging
 - Traditionally High Field Layout Cost
 - High Flowline and Infrastructure Cost
 - Complex Field- Subsurface Reservoirs

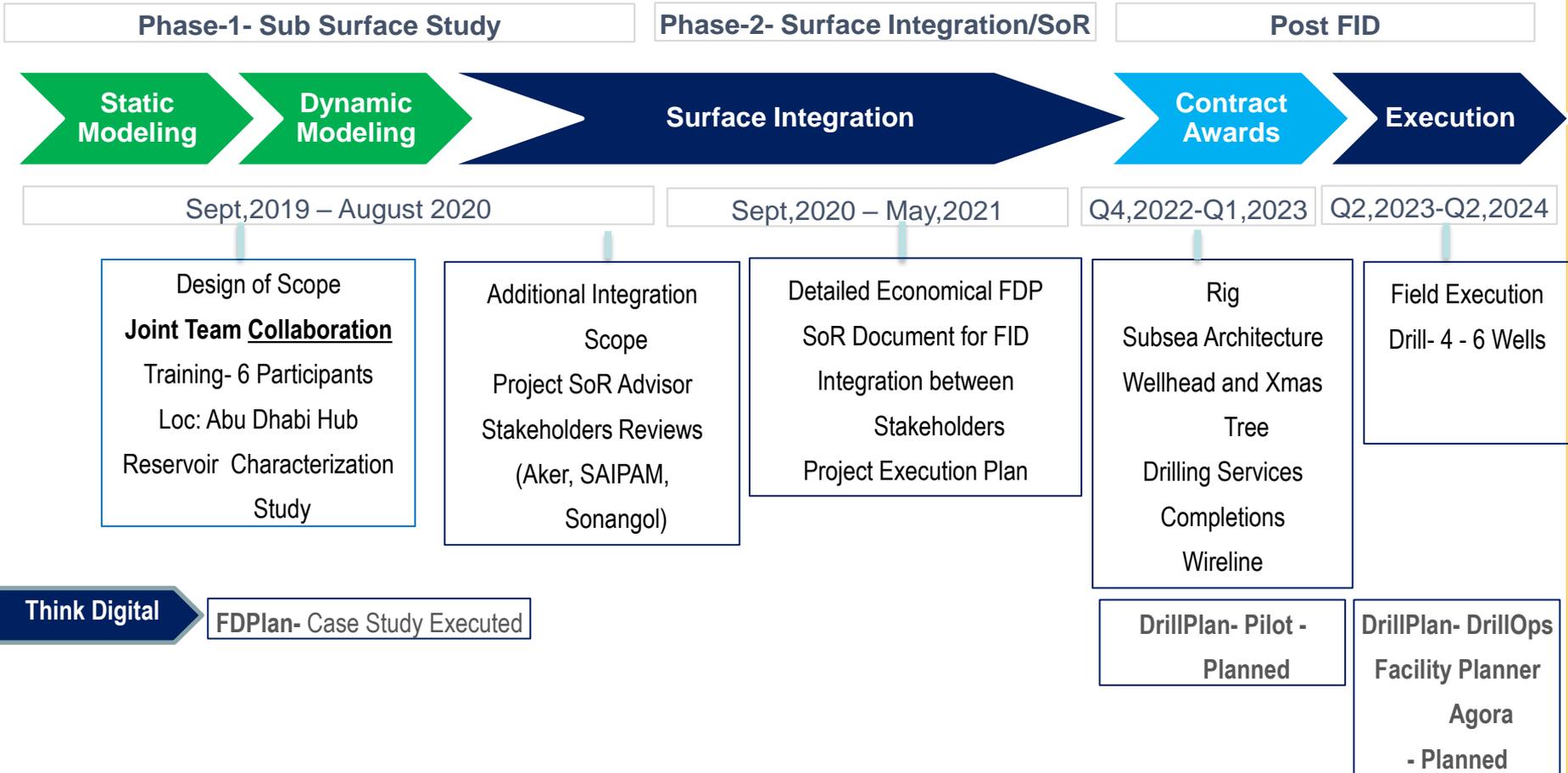


Sonangol Challenges:

- Extend life of Block-4- Declining Plateau in Gimboa
- Rejuvenate the field to enhance field production to support Angola drive to maximize production
- Lack of Economical field Development Plan for UM6/UM7
- Preparation of Statement of Requirement- FDP document for FID- Challenging Multi stakeholder Engagement.



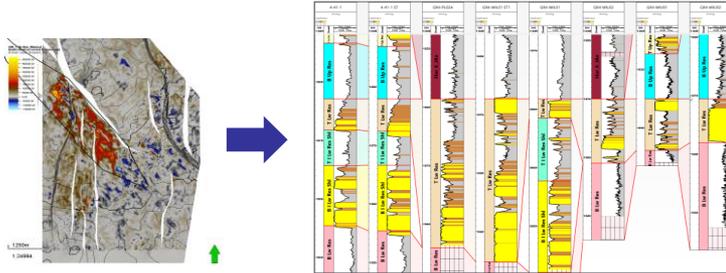
Execution Strategy- Engagement



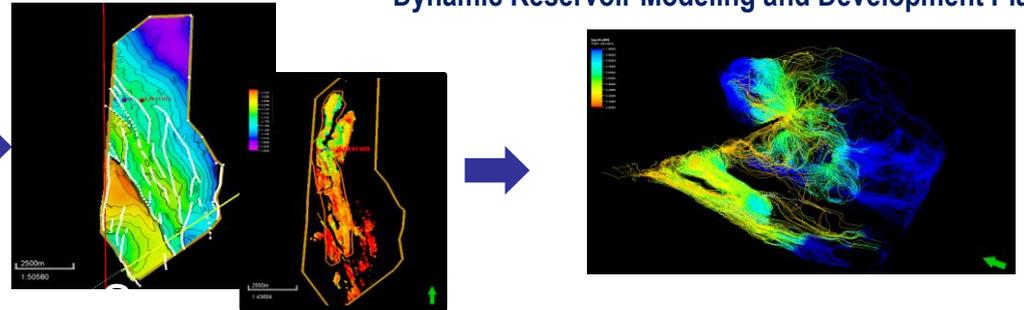


Multi Domain Integration

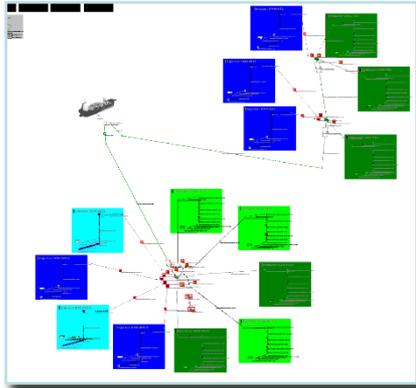
Petrophysical Evaluation



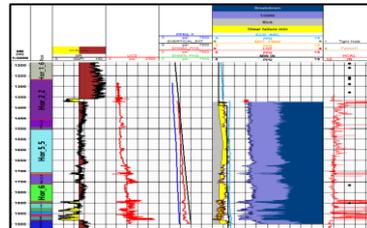
Dynamic Reservoir Modeling and Development Plan



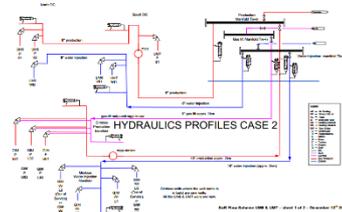
Seismic Interpretation/ Inversion



Complex Geological Model

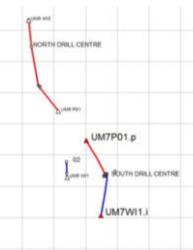
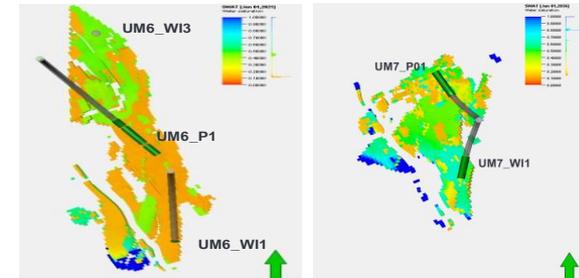


Geomechanical Modeling



Life of Field Flow Assurance

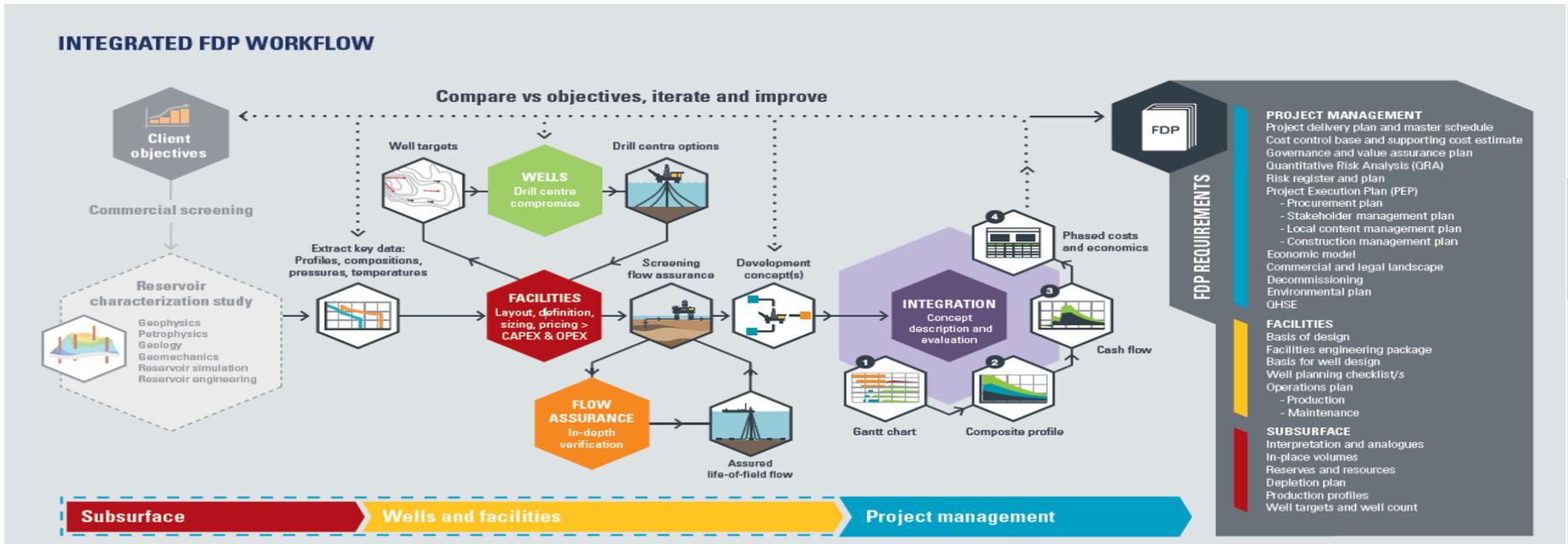
Flow Scheme Design



Field Layout



Field Development Integration - Full Execution



Joint Integrated Team

- 6 Sonangol Participants in Abu Dhabi Hub Focused Execution
- Multidomain SLB Team- Lead by Advisors



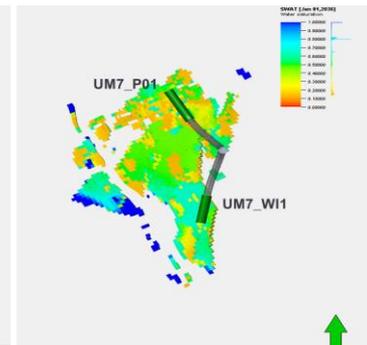
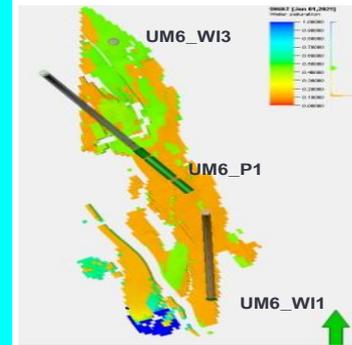
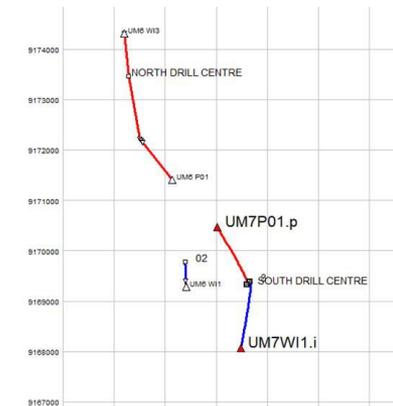
Field Layout Options- Optimized Development Plan

- **Initial Case**
 - Two Drill Centres- 3 wells each
- **Optimized Case**
 - Two Drill Centres – 5 wells in total
 - Remote Injector from South Drill Center
- **Key Achievements**
 - Reduction of drilling MD ~ 3.6Km,
 - ~ 25 Million USD Saving
 - Reduction of Flowline size from 10” to 8”
 - Reduction on facility cost
 - Optimization of GasLift requirements
 - No or minimum GL
 - Reduction in Facility and Opex Cost

Initial Field Layout

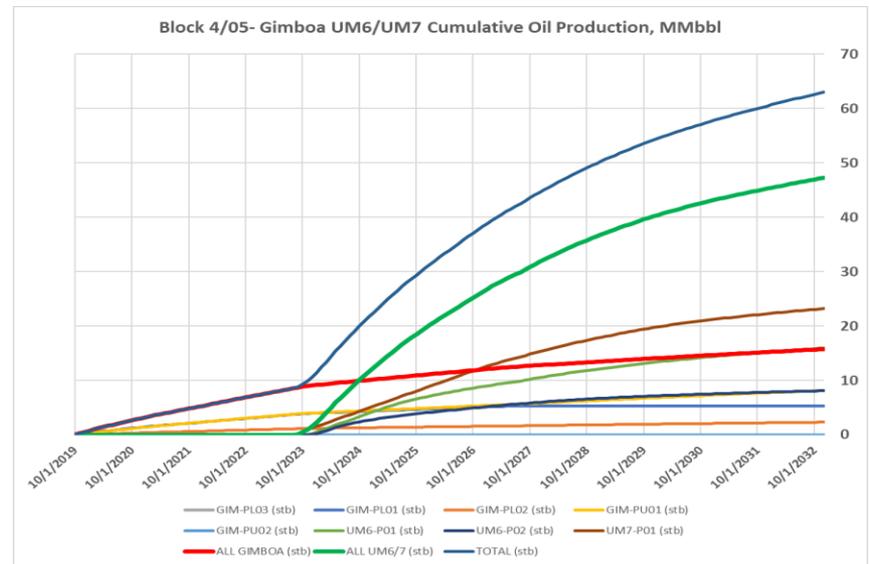
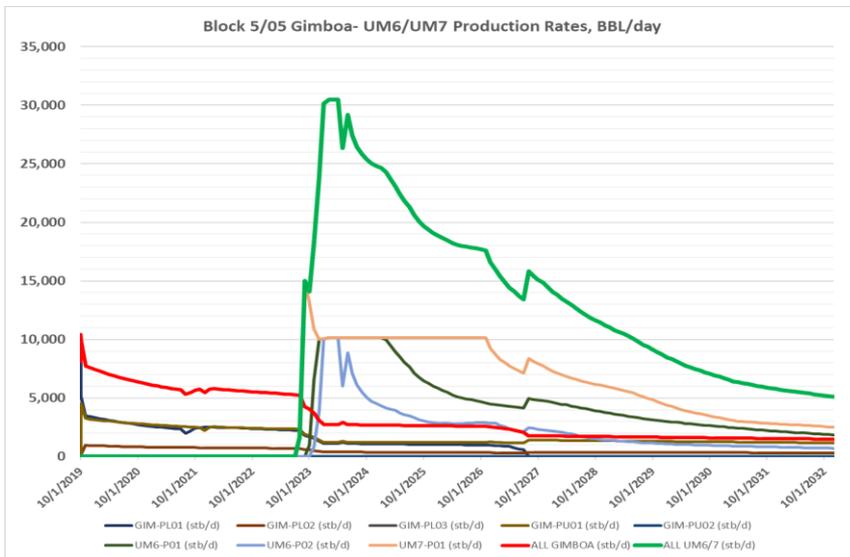


Optimized Field Layout (< 3.6km)





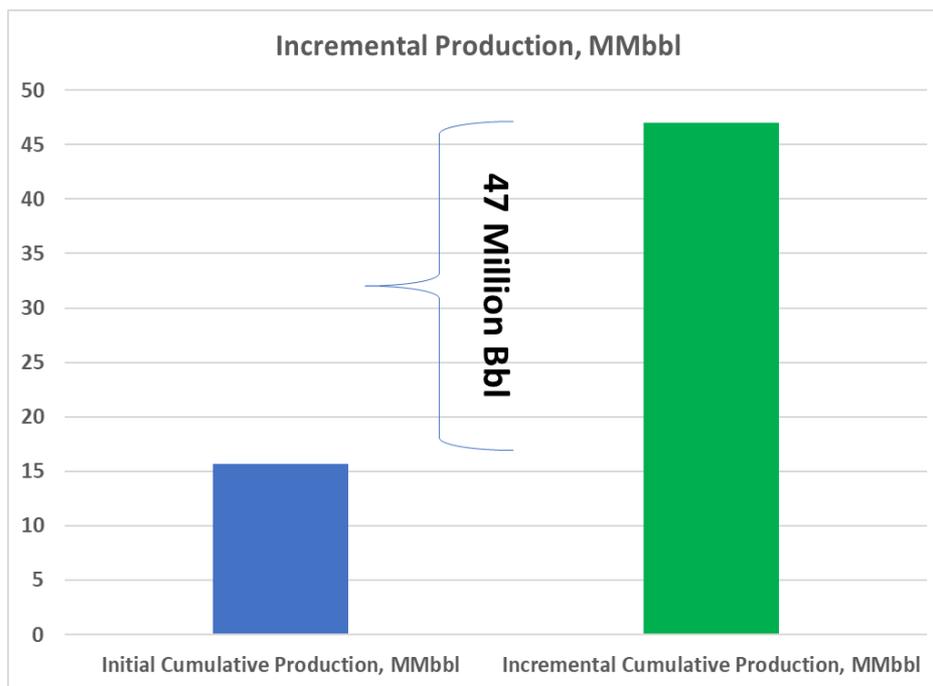
Incremental Production with New Development



- Expected production around 30 MMbbls.
- Combining Gimboa, UM6 & 7 resulted on Total Field Cumulative Oil Production of 62 MMbbls.



Field Potential Incremental Outlook



- Incremental Production of 47 MMbbl
- Extending block life by 5-7 Years till 2032



Collaboration and Way Forward

- Knowledge Transfer - Local Content
- 2 x SPE Papers – SPE 202827/ SPE 202677

Think Digital





Acknowledgements

- Thank you to the Sonangol Management, Technical Team, Schlumberger Management, Technical Team and Hub Advisors

Q&A